

IN THE CLAIMS:

Please amend claims 1, 2, 4, 6-14, 16-19, 21, and 22, cancel claims 3, 5, 15, and 20 without disclaimer or prejudice, and add new claims 23-35, as follows.

1. (Currently Amended) A method, comprising: for network layer load balancing for a server farm system, wherein the server farm system comprises at least one router and two servers connected to each other with a communication link;

characterised in that the method comprises the steps of:

providing a service with a service process in a server;

configuring a service-specific anycast address to a the server interface interfaces on a the communication link via which the server receives messages from a router or other servers;

monitoring the service process and the service-specific anycast address configured interface;

scheduling the service process and the need for an advertisement message, wherein the scheduling is configured to take advertisement messages received to the service-specific anycast address from other servers into account in determining the need for an advertisement message; and

sending an advertisement message when the service process is able to provide the service via the communication link to all other servers in response to the scheduling.

~~sending from a server which is ready for offering the service an advertisement message to all nodes on the communication link, the advertisement message comprising at least the service specific anycast address and the link layer address of the server;~~

~~receiving one or more advertisement message from the server(s) with the router;~~

~~updating the neighbour cache entry in the router based on the information of the advertisement message(s); and~~

~~sending service queries to the servers according to the information in the neighbour cache entry.~~

2. (Currently Amended) The method according to claim 1, ~~characterised in that~~ wherein the sending of the advertisement message ~~sending functionality in the servers is~~ activated by a solicitation message from the router.

3. (Cancelled)

4. (Currently Amended) The method according to claim 2 ~~1~~, ~~characterised in that~~ ~~the Neighbour Discovery~~ wherein neighbor discovery protocol is used, wherein said solicitation message is a ~~Neighbour Solicitation~~ neighbor solicitation message and said advertisement message is an ~~Unsolicited Neighbour Advertisement~~ unsolicited neighbor advertisement message ~~where the~~ wherein an override flag is set.

5. (Cancelled)

6. (Currently Amended) The method according to claim 1 further comprising,
~~characterised in that the method comprises the steps of:~~

~~—monitoring the advertisement messages on the link and the service process in
the server; and~~

delaying the sending of a new advertisement message ~~if necessary~~.

7. (Currently Amended) The method according to claim 1, ~~characterised in that~~
wherein if a the server is not receiving any receives less than a predefined number of
service queries in a predefined time interval, the method further comprises:

stopping the sending of the advertisement messages; and

switching to ~~the~~ a standby mode.

8. (Currently Amended) The method according to claim 7, ~~characterised in that~~
wherein if a the server being in the standby mode receives a solicitation message, the
sending of the advertisement messages continues.

9. (Currently Amended) The method according to claim 1, ~~characterised in that~~
wherein when the service process in a server stops, sending of the advertisement
messages is stopped.

10. (Currently Amended) The method according to claim 1, ~~characterised in that~~ the wherein Open Shortest Path First version 6 OSPFv6 protocol is used in the communication between the router and the servers.

11. (Currently Amended) The method according to claim 1 further comprising, ~~characterised in that the method comprises the step of:~~

sending an advertisement message with a route cost value ~~values~~ suitable for the current situation in the server.

12. (Currently Amended) The method according to claim 11 further comprising ; ~~characterised in that~~ increasing the route cost value if the server providing the service is getting congested.

13. (Currently Amended) The method according to claim 11 further comprising ; ~~characterised in that~~ decreasing the route cost value if the server providing the service has capacity for new service queries.

14. (Currently Amended) The method according to claim 1, ~~characterised in that~~ wherein the advertising message is an Open Shortest Path First version 6 OSPFv6-Link State Advertisement message.

15. (Cancelled)

16. (Currently Amended) The method according to claim 11 further comprising,
~~characterised in that method comprises the step of:~~

sending an advertisement message with service load information.

17. (Currently Amended) The method according to claim 1 further comprising,
~~characterised in that~~ delivering the service load information of a the server with a
separate protocol.

18. (Currently Amended) The method according to claim 1, ~~characterised in that~~
wherein the service is the domain name system DNS-service.

19. (Currently Amended) An apparatus, comprising: ~~A server for network layer~~
~~load balancing wherein the server is connected to a communication link with which it~~
~~receives messages from a router or other servers, wherein the server comprises at least:~~

a service process (300) configured to provide providing the service on a
communication link via which the server is adapted to receive messages from a router or
other servers;

~~characterised in that the server comprises:~~

a service-specific anycast address configured to ~~the~~ a server interface (314) on the communication link;

monitoring means ~~(304)~~ for monitoring said service process (300) and the service-specific anycast address configured interface (314);

service scheduling means (306) for scheduling the service process (300) and the a need for an advertisement message, wherein the service scheduling means are configured to take into account in determining the need for an advertisement message advertisement messages received to the service-specific anycast address from other servers; and

sending means (308) for sending an advertisement message when the service process (300) is able to provide the service via the communication link to all other servers in response to the scheduling of the service scheduling means.

20. (Cancelled)

21. (Currently Amended) The ~~server~~ apparatus to claim 19 further comprising ; ~~characterised in that the server comprises~~ means (304) for enclosing service load information in the advertisement message.

22. (Currently Amended) The ~~server~~ apparatus to claim 19, wherein ~~characterised in that~~ the service in the server is the domain name system ~~DNS~~-service.

23. (New) The apparatus according to claim 19, wherein the advertisement message sending functionality in the server is configured to be activated by a solicitation message from the router.

24. (New) The apparatus according to claim 19, wherein the neighbor discovery protocol is used wherein said solicitation message is a neighbor solicitation message and said advertisement message is an unsolicited neighbor advertisement message where the override flag is set.

25. (New) The apparatus according to claim 19, wherein the service scheduling means are configured to delay the sending of a new advertisement message.

26. (New) The apparatus according to claim 19, wherein if the server is not receiving any service queries in a predefined time interval, the server is configured to stop the sending of the advertisement messages and to switch to the standby mode.

27. (New) The apparatus according to claim 26, wherein if the server being in the standby mode receives a solicitation message, the server is configured to continue the sending of advertisement messages.

28. (New) The apparatus according to claim 19, wherein when the service process in a server stops, the server is configured to stop the sending of the advertisement messages.

29. (New) The apparatus according to claim 19, wherein the Open Shortest Path First version 6 protocol is used in the communication between the router and the servers.

30. (New) The apparatus according to claim 19, wherein the server comprises means for enclosing a route cost value suitable for the current situation of the service process in the server sending means in the advertisement message.

31. (New) The apparatus according to claim 30, wherein the server is configured to increase the route cost value if the service is getting congested.

32. (New) The apparatus according to claim 30, wherein the server is configured to decrease the route cost value if the service has capacity for new service queries.

33. (New) The apparatus according to claim 19, wherein the advertising message is an Open Shortest Path First version 6 Link State Advertisement message.

34. (New) A computer program embodied on a computer readable medium, the computer readable medium storing code comprising computer executable instructions comprising:

providing a service with a service process in a server;

configuring a service-specific anycast address to a server interface on a communication link via which the server receives messages from a router or other servers;

monitoring the service process and the service-specific anycast address configured interface;

scheduling the service process and the need for an advertisement message, wherein the scheduling is configured to take advertisement messages received to the service-specific anycast address from other servers into account in determining the need for an advertisement message; and

sending an advertisement message when the service process is able to provide the service via the communication link to all other servers in response to the scheduling.

35. (New) A server configured to:

provide a service with a service process;

configure a service-specific anycast address to a server interface on a communication link via which the server receives messages from a router or other servers;

monitor the service process and the service-specific anycast address configured interface;

schedule the service process and the need for an advertisement message, wherein the scheduling is configured to take advertisement messages received to the service-specific anycast address from other servers into account in determining the need for an advertisement message; and

send an advertisement message when the service process is able to provide the service via the communication link to all other servers in response to the scheduling.